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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,684	07/24/2003	Richard D. Sale	CUNO-593.1	1052
45017	7590	07/07/2005	EXAMINER	
CUNO INCORPORATED 400 RESEARCH PARKWAY P. O. BOX 1018 MERIDEN, CT 06450-1018			MENON, KRISHNAN S	
			ART UNIT	PAPER NUMBER
			1723	

DATE MAILED: 07/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/626,684

Applicant(s)

SALE ET AL.

Examiner

Krishnan S. Menon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 October 2004.  
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.  
4a) Of the above claim(s) 1-10 and 18-20 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 11-17 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 24 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08).  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

Claims 1-20 are pending.

#### ***Election/Restrictions***

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-10 and 18-20, drawn to microporous membrane, classified in class 210, subclass 500.27
- II. Claims 11-17, drawn to method of making microporous membrane, classified in class 427, subclass 245.

The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made without having a non-woven reinforcement as in the process claims, or it can be made by a melt-extrusion process.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

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Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.

During a telephone conversation with Mr. Thomas Payne on 7/1/05 a provisional election was made without traverse to prosecute the invention of group II, claims 11-17. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-10 and 18-20 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 083 489 A2 in view of Vining Jr. et al (US 6,090,441).

EP'489 teaches a method of making a laminated microporous membrane by laminating the skin side to the skin side of two segments of a microporous membrane (page 9 1<sup>st</sup> paragraph, page 10 1<sup>st</sup> paragraph, and the example). EP'489 also contemplates having prefilter and reinforcing material in page 9. The skin-to-skin (or qualifying layer to qualifying layer) laminated membrane is taught particularly for reducing the probability of having pinholes and improving the bacteria reduction rate to better than 5 log reduction (see page 10 and the example).

EP'489 teaches the process of making phase-inverted asymmetric membranes for making the laminated membrane, but does not teach making the membrane by impregnating the support material with a first dope on first side and a second dope on the second side so that the first dope is phase-inverted to define the prefilter and second to define the qualifying layer (skin layer). Vining teaches the process of making such membrane – see abstract, figures, column 5 lines 9 – 67 and examples. It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Vining in the teaching of EP'489 to make the membrane for using in the lamination process to make the laminated membrane as taught by EP'489 because EP does not teach a process for the continuous manufacture of the membrane, and the process of Vining would be especially useful because of the advantages of the Vining's teaching as seen in column 4 lines 20-67, particularly, the advantages of the geometrically symmetric structure, mechanical strength, flexibility and processibility for making cartridges while assuring structural integrity. Conversely, it would also be obvious to one of ordinary skill in the art at the time of invention to use the teaching of EP'489 in the

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teaching of Vining to have the Vining process improved to make a laminated structure for use in bacterial or microbial filtration as taught by EP because the EP process would afford a membrane structure that would give better than 5 log reduction, and the Vining process would provide the structurally robust membrane for manufacturing membrane and membrane cartridges.

With regard to the lamination process, EP teaches the skin-to-skin contact as "intimate" (see claim 1 of EP'489), which is what the applicant discloses – see page 18 lines 18-20.

Claims 12-16: Vining teaches the steps of having the pore size ratio of at least 20% (column 6 lines 35-45), applying the third dope (figure 2), quenching, rinsing and washing the membrane in the manufacturing process (examples) (also taught by EP – see example), support material is polypropylene (example 1).

2. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 083 489 A2 in view of Vining et al (US 6,090,441) as applied to claim 11 above, and further in view of Barnes Jr. et al (US 4,707,265).

EP in view of Vining does not teach the details of the lamination step as claimed. Barnes teaches that the laminating process of laminating between rollers is well known, and the lamination is prior to drying (column 13 lines 25-40; drying by 'winding the laminated membrane tightly about a drying surface'). It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of the well known process for lamination for laminating the membrane as taught by Barnes in the

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teaching of EP in view of Vining, because EP in view of Vining do not provide the details of lamination.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S. Menon whose telephone number is 571-272-1143. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Krishnan S. Menon  
Patent Examiner  
7/2/05